

REMARKS

Claims 21-27 and 29-49 are pending. By this Amendment, claims 21, 30, 34, 37, 39, 40, 43 and 45-47 are amended to recite features supported in the specification on page 10, line 18 – page 12, line 24 and Fig. 2 of the drawings. No new matter is added by any of these amendments.

Reconsideration based on the following remarks is respectfully requested.

I. Amendment Entry after Final Rejection

Entry of this amendment is proper under 37 CFR §1.116 because the amendments: a) place the application in condition for allowance (for all the reasons discussed herein); b) do not raise any new issues requiring further search or consideration; c) place the application in better condition for appeal (if necessary); and d) address formal requirements of the Final Rejection and preceding Office Action.

The foregoing amendments do not raise any new issues after Final Rejection. Therefore, entry of the amendments is proper under 37 CFR §1.116 because the amendments place the application in condition for allowance. Accordingly, Applicants respectfully request entry of this Amendment.

II. Claims 21-27, 29 and 49 Define Patentable Subject Matter

The Final Office Action rejects claims 21, 22, 25-27, 29 and 49 under 35 U.S.C. §103(a) over U.S. Patent 5,688,551 to Littman *et al.* (Littman) in view of U.S. Patent 5,779,937 to Sano *et al.* (Sano) and U.S. Patent 5,754,262 to Lengyel. The Final Office Action further rejects claim 23 under 35 U.S.C. §103(a) over Littman in view of Sano and Lengyel and further in view of U.S. Patent 5,847,506 to Nakayama *et al.* (Nakayama). The Final Office Action further rejects claim 24 under 35 U.S.C. §103(a) over Littman in view of Sano and Lengyel and further in view of U.S. Patent 6,091,382 to Shioya *et al.* (Shioya). These rejections are respectfully traversed.

Littman, Sano and Lengyel do not teach or suggest a light source including a plurality of organic electroluminescent elements arrayed in a common plane parallel to a support surface of a substrate, the plurality of organic electroluminescent elements emitting light simultaneously, P being a distance in the common plane between centers of adjacent organic electroluminescent elements and D being a distance between each organic electroluminescent element and a display surface of a display element, and a relationship between D and P being such that D is at least 10 times P, each organic electroluminescent element having a length in the common plane, the organic electroluminescent elements being separated from each other by a difference of P and the length, as recited in claim 21.

Instead, Littman discloses a method of forming an organic electroluminescent (EL) device 100. In particular, Littman teaches a transparent substrate 110 having column electrodes 120 overlaid by organic EL media 130 that are overlaid by row electrodes 140. The electrodes 120 and 140 are laterally spaced for electrical insulation. Each pixel in Littman is formed at the intersection of a column electrode and a row electrode. See col. 3, lines 26-63 and Fig. 1 of Littman. Also, Littman teaches the EL media 130 as being less than 1 mm thick and typically less than 5000Å (0.5 µm), composed of individual layers between 100Å and 2000Å thick. See col. 6, lines 34-41 of Littman.

Further, Sano discloses an organic electroluminescent device including a chelate compound. In particular, Sano teaches a glass substrate 1 having an ITO electrode 2 of 2000Å thickness. The ITO electrode 2 is overlaid by a TPD layer 3 of 500Å thickness. The TPD layer 3 is overlaid by a luminescent ZnNBTZ layer 4 of 500Å thickness. The luminescent layer 4 is overlaid by a MgIn electrode 6 of 2000Å thickness. See col. 9, lines 54-67 and Fig. 1 of Sano.

Also, Lengyel discloses a liquid crystal display (LCD) 100 having a contrast enhancement filter to operate under bright ambient conditions. In particular, Lengyel teaches a backlit assembly 102 separated from a display element 103 by 1 to 5 mm, and the display

element 103 having linear polarizers 112, 120. Lengyel further teaches a contrast enhancement assembly 105 with a filter 130 that absorbs a portion of light outside the visible spectrum. See col. 4, lines 27-34, col. 5, lines 45-49, col. 6, lines 4-18 and Fig. 1 of Lengyel.

While Lengyel provides for a separation distance range between the backlit assembly 102 and the display element 103 that might be analogous to D, Lengyel fails to teach or suggest a value of separation between adjacent display elements 103, that might be analogous to P. Thus, Lengyel neither teaches nor suggests a relationship between D and P being such that D is 10 times P or more, as recited in Applicants' claims.

The Office Action asserts that it is inherent that the separation 110 in Lengyel (analogous to D) would be 10 times or more than the distance (between elements as analogous to P) shown in Littman. Applicants respectfully disagree, by submitting that Littman and Sano teach dimensions related to the pixels that are orders of magnitude less than provided in the application, thus teaching away from combining with Lengyel to achieve Applicants' claimed features.

Also, because neither Littman nor Sano consider thermal dissipation as an objective or advantage to their disclosures, the applied references fail to render obvious the subject matter of Applicants' claimed features. Further, the respective technologies for organic electroluminescent elements (Littman, Sano) and liquid crystals (Lengyel) differ in implementation, negating any motivation to combine such references.

Applicants submit that there is no motivation to combine features related to the organic EL media of Littman with the chelate device of Sano or with the LCD linear polarizers of Lengyel. Thus, the Final Office Action established a *prima facie* case of obviousness.

Nakayama does not compensate for the deficiencies of Littman, Sano and Lengyel outlined above for claim 21. Nor does Nakayama teach, disclose or suggest the additional features recited in claim 23. Instead, Nakayama discloses an organic light emitting device

with successive layers including a glass substrate 1, a reflective film 2, a conductive film 3, a hole injecting layer 4, a light emitting layer 5, an electron injecting layer 6, and electrodes 7. a micro-resonator structure. In particular, Nakayama teaches that the reflective film 2 generates an electromagnetic wave of resonant frequency. See col. 3, line 61 - col. 4, line 10, col. 4, lines 51-64 and Fig. 1 of Nakayama.

Further, Shioya does not compensate for the deficiencies of Littman, Sano and Lengyel outlined above for claim 21. Nor does Shioya teach, disclose or suggest the additional features recited in claim 24. Instead, Shioya discloses a display device having low pixel cross-talk. In particular, Shioya teaches an organic electroluminescent element 11 in which striped cathode electrodes 13 are formed on a transparent substrate 12, and a photoconductive layer 14 covers the substrate 12 and electrodes 13. Shioya further teaches an electron transport layer 15, a luminescent layer 16 and an anode electrode 17 are sequentially stacked on the layer 14. See col. 5, line 59 - col. 6, line 12 and Fig. 1 of Shioya. Also, Shioya teaches that the luminescent layer 16 is composed of a mixture of PVCz and BND. See col. 6, lines 30-40 of Shioya.

While Shioya provides a timing chart for applying drive voltages between adjacent cathode nodes, these pulses are provided in staggered consecutive order for the respective EL elements according to color. See col. 12, line 57 - col. 13, line 39 and Fig. 17 of Shioya. In contrast, Applicants' claimed features provide for electric current applied in a simultaneous pulse mode for the electrodes, and for intensity control by amplitude variation of the current. Shioya fails to teach or suggest such features.

Withdrawal of the rejections of claims 21-27, 29 and 49 under 35 U.S.C. §103(a) are respectfully requested.

III. Claims 30-48 Define Patentable Subject Matter

The Final Office Action further rejects claims 30, 31, 33-35, 38, 40, 41 and 44 under 35 U.S.C. §103(a) over U.S. Patent 5,185,712 to Sato *et al.* (Sato) in view of Shioya. The

Final Office Action further rejects claims 32, 36, 37, 39, 42, 43 and 45-48 under 35 U.S.C. §103(a) over Sato in view of Shioya and further in view of U.S. Patent 5,707,745 to Forrest *et al.* (Forrest). These rejections are respectfully traversed.

Sato and Shioya do not teach or suggest a display device including, *inter alia*, a light source having an organic electroluminescent element forming a plurality of luminescent sections, centers of adjacent luminescent sections having a distance P in a common plane therebetween, each luminescent section having a length in the common plane, the adjacent luminescent sections being separated from each other by a difference of P and the length, a display element illuminated by the light source, the plurality of luminescent sections being separated from the display element by a distance D, wherein D is at least ten times P, an optical system that enlarges and displays an image displayed in the display element, the organic electroluminescent element having a luminescent region having substantially the same size as that of a display area of the display element, and a pulse current supply source for providing a pulsing current to the organic electroluminescent element to cause light emission, as recited in claim 30, and similarly recited in claim 46. Also, Sato and Shioya fail to teach or suggest a similar display device having first, second and third organic electroluminescent elements, as recited in claims 34, 40 and 47.

Instead, Sato discloses a viewfinder 10 having a liquid crystal display panel 12 with adjacently mounted display sections 13R, 13G, 13B and reflecting mirrors 17, 18, 19 to reflect light from the display sections to an eyepiece 16 through a mirror barrel 15. See col. 3, lines 28-42, col. 4, lines 26-36 and Fig. 2 of Sato.

Further, Shioya discloses the low pixel cross-talk display, as discussed above for claim 24. In particular, Shioya teaches consecutive drive voltage pulses according to element color. See col. 13, lines 11-24 of Shioya. As discussed above, Applicants' claimed features provide for electric current applied in a simultaneous pulse mode for the electrodes, which Shioya fails to teach or suggest.

Additionally, Forrest does not compensate for the deficiencies of Sato and Shioya outlined above for claims 30, 34 and 40. Nor does Forrest teach, disclose or suggest the features recited in claims 46 and 47. Instead, Forrest discloses vertically stacked layers of double heterostructure light emitting diodes (LEDs) 20, 21, 22 on a glass substrate 37. In particular, Forrest teaches such devices, *e.g.*, LED 20 as consisting of an HTL layer 20H disposed on an ITO layer 35, with an EL layer 20E sandwiched between a top ETL layer 20T and the HTL layer 20H. These LEDs are superposed one above the other. See col. 4, lines 4-25, col. 5, lines 4-18 and Figs. 2A-2C and 14A of Forrest. Thus, Forrest teaches away from Applicants' claimed features regarding elements in a common plane of a substrate support surface.

Further, there is no motivation to combine features related to the liquid crystal display panel of Sato with the electroluminescent elements of Shioya or the stacked LEDs of Forrest, nor has the Final Office Action established sufficient motivation or a *prima facie* case of obviousness. Withdrawal of the rejections of claims 30-48 under 35 U.S.C. §103(a) is respectfully requested.

For at least these reasons, Applicants respectfully assert that the independent claims are now patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicants respectfully request that the rejections under 35 U.S.C. §103 be withdrawn.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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